Appl. No. 09/884,805
Amdt. dated 5th January 2004
Reply to Office communication mailed 08-Mar-04

Listing of Claims:

1-21. **(Cancelled by earlier amendment)**

22. **(Currently amended)** A method for selectively etching a localized area in a substrate outer top surface, comprising the steps of:

arranging a lower surface of a confinement device over the substrate outer top surface, leaving a spacing therebetween, so that an aperture through said lower surface is located generally above the localized area; and

providing an etchant gas to a channel in said device that is in communication with said aperture, said spacing being less-than an inner width of said aperture so that a higher intensity reaction can occur within said channel.

23. **(Currently amended)** The method of Claim 22 wherein said step of arranging a lower surface further comprises placing a shelf area of said device in contact with a perimeter of the substrate outer top surface such that said spacing is generally equidistant over at least an area of the substrate outer top surface on which microcircuits are fabricated, and wherein said spacing is less than a sheath thickness of said etchant gas.

24. **(Original)** The method of Claim 22 wherein said etchant gas, within said channel, is a radio-frequency (RF) plasma and said spacing is less than a sheath thickness of said RF plasma; and further comprising the step of inducing and sustaining said RF plasma with RF energy within an etching chamber into which the outer top surface has been placed.

25. **(Original)** The method of Claim 22 wherein said higher intensity reaction comprises formation of a higher intensity plasma by using microwave energy from a remote source, and said step of providing an etchant gas further comprises directing a flow of said etchant gas through an entry port of said channel for said reaction.

26. **(Original)** The method of Claim 22 wherein said step of arranging a lower surface further comprises positioning said device such that said spacing is between 24 microns and 1001 microns and covers the whole of the outer top surface; and wherein the localized area in the outer top surface is of a material selected from the group consisting of silicon, silicon-oxide, and silicon-nitride.

27. **(Original)** The method of Claim 22 wherein said step of arranging a lower surface further comprises positioning a second aperture through said lower surface above a second identified localized area in the outer top surface, said second aperture in communication with a second channel; and wherein each of said localized areas in the outer top surface is made of a metal selected from the group consisting of titanium (Ti), titanium-nitride (TiN), aluminum (Al), copper (Cu), tungsten (W), tantalum (Ta), tantalum-nitride (TaN), molybdenum (Mo), and niobium (Nb) located over a respective first and second prior-defined recess.

28. **(Currently amended)** A method for selectively etching a localized area in a substrate outer top surface, comprising the steps of:

arranging a lower surface of a confinement device over the substrate outer top surface, leaving a spacing therebetween that covers at least an area of the outer top surface on which microcircuits are fabricated, so that an aperture through said lower surface is located generally above the localized area; and

providing an etchant gas to a channel in said device that is in communication with said aperture, said spacing being generally less than a sheath thickness of said etchant gas.

29. **(Original)** The method of Claim 28 wherein said etchant flows through an entry port of said channel, said channel entry port having an inner diameter less than an inner width of said aperture; and further comprising the step of inducing and sustaining a radio-frequency (RF) plasma within said channel by applying RF energy with an inductively coupled antenna located immediately outside a vacuum etching chamber into which the outer top surface has been placed.

30. **(Original)** The method of Claim 28 wherein said step of arranging a lower surface further comprises positioning a conductive surface of said device such that said spacing is between 24 microns and 1001 microns and covers the whole of the outer top surface, an inner-wall of said channel having been made substantially of a dielectric material.

31. (**Currently amended**) The method of Claim 28 wherein said step of arranging a lower surface further comprises placing a shelf area of said device in contact with a perimeter of the substrate outer top surface and positioning a second aperture through said lower surface above a second identified localized area in the substrate outer top surface, said second aperture in communication with a second channel; and wherein each of said localized areas in the outer top surface are over a respective first and second prior-defined recess.

32. (**Original**) The method of Claim 28 further comprising, prior to said step of arranging a lower surface, the step of positioning an IC onto a chuck with a contoured surface for support under a counter-electrode; and wherein said step of arranging a lower surface further comprises positioning said device such that said spacing is generally equidistant and greater than the largest expected contaminant particle that may be within said spacing.

33. (**Original**) The method of Claim 28 wherein said step of arranging a lower surface further comprises positioning said device such that said spacing is generally equidistant over said area on which microcircuits are fabricated, said device has been machined of a metal, and the localized area in the substrate outer top surface is of a material selected from the group consisting of silicon, silicon-oxide, and silicon-nitride.